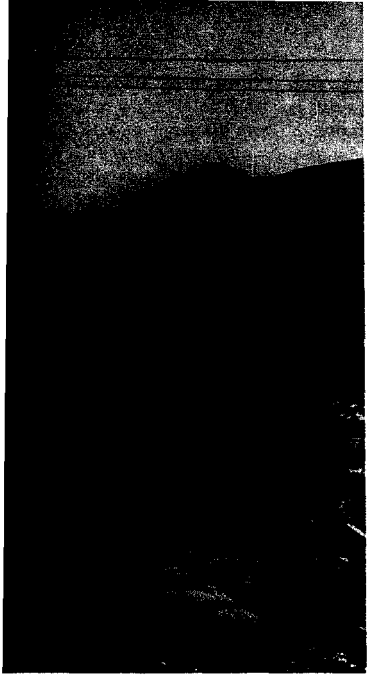
GOOD and BAD Weapor

Jac Weller

These observations by Mr. Weller, noted firearms consultant, are based on a recent trip made by him to Vietnam and a previous one 30 months earlier.—Editor.

THE US Armed Forces, in 1965, were using either old weapons in new circumstances or new arms not yet tried out in combat. We were rating materiel on conjecture, field tests, and, perhaps, some second-hand reports from Malaysia and the Philippines. We also had weapons observations from US advisors assigned to Army Republic of Vietnam (ARVN) units, but these were subject to question. Now, we really know what weapons are good and bad because we have used them ourselves when the chips were down.

The weapons of the enemy have gone



or Vietnam

through a similar evaluation period. Three years ago, their arms were mostly cast-offs. Consequently, they used anything that would shoot. Now, they have much better arms. In most areas, they have reached the upper limit in weight which can be supported by their logistics system.

US Army and Marine rifle battalions committed to Vietnam in 1965 were well equipped for general combat. In many instances, however, they were too well equipped. Their table of organization and equipment (TOE) did not fit Vietnam. Some arms needed to be changed; others have been discarded. The North Vietnamese Army and the Viet Cong have had similar problems.

'M79' Grenade

The most successful new weapon introduced into the US Armed Forces since Korea is probably the *M79* grenade launcher. This simple, large-bore, short-barreled, shoulder weapon discharges a six-ounce explosive shell called a grenade. The projectile is only about a third as heavy as most hand grenades. The explosive inside is, however, extremely quick acting and powerful. More than 300 fragments of casing and square iron wire are exploded in all directions at an initial velocity of about 5,000 feet per second. In theory, the US *M26* hand grenade, which weighs 16 ounces, is better since it has three times as many fragments and four times as much explosive. A further theoretical disadvantage of the *M79* grenade launcher is the low-muzzle velocity of the shell itself—only 240 feet per second. This causes a fairly high trajectory even for a range of 100 yards.

Actual experience in combat has proved these fears groundless. The *M79* bomb or shell makes up for its lack of power by the ease and accuracy with which it can be delivered. A grenadier can shoot through a window-sized opening at a range of 80 yards almost every time, and area targets can be engaged effectively much farther away. Men do not need to expose themselves or reveal their position when they throw an *M79* grenade. The lethal radius of the bomb is subject to

some question, but it has been deadly upon striking an enemy group such as a machinegun crew.

The new grenade launcher is ineffective at close range because its bomb

M79 grenade launcher held by a Thai infantryman

must travel 15 yards before it is armed, and it has limited penetrating ability. Buckshot rounds are the obvious answer, but for some reason, these have not been as efficient as they should be. I opened several in Vietnam and always found only 20 pellets, size number 4 buckshot. The *Remington* 12-gauge, three-inch Magnum cartridge has 41. The *M79* has more than twice the bore diameter of a 12-gauge shotgun. An auxiliary chamber to handle 12-gauge ammunition is also available in the country, but the only cartridge to fit it is usually the eight pellets of 00 buckshot. Some arrangement for delivering more number 4 buckshot pellets, limited only by the recoil that a man could stand, would appear to be desirable.

Hand Grenades

Hand grenades have been a disappointment. Their main advantage may be to bolster morale. A high percentage of those carried about on patrols—even the patrols that do make contact—are never used. Too often, hand grenades are pulled off soldiers' belts by vines. Sometimes these explode because the safety pin has been torn loose. More frequently, the grenade is just lost. It will probably be picked up by the enemy and used in one of their booby traps since our grenades are better than theirs.

Trained and talented athletes, especially football forward passers, can throw hand grenades effectively. However, there are never enough of these grenadiers. Our South Vietnamese allies make poor hand grenadiers, but they can shoot the *M79* as well as anyone.

Another successful infantry weapon introduced into the Vietnam war is the *M16* rifle. This is, of course, the controversial *AR15* weapon firing the caliber .22 (5.56-millimeter), high-velocity bullet. Early reports of its combat effectiveness were mixed, prompting even a congressional investigation of its shortcomings. When you talk to men armed with this weapon in Vietnam, you hear mostly

praise. There have been malfunctions, but proper training and cleaning discipline reduce these to an acceptable number. Although some minor modifications have been made in the rifle itself, proper care is more important.

I investigated personally the experience of the 101st Air Cavalry Division with this weapon. Every man armed with the *M16* not only receives special instructions in regard to handling it and keeping it clean, but also rezeroes it at least once a month. The division commander personally checks his program to remind every soldier of what should be done for and with his rifle. Only one failure-to-extract malfunction occurred in a period during which the division killed more than 4,000 of the enemy.

Advantages and Disadvantages

The *M16*, 55-grain, 5.56-millimeter bullet has few disadvantages over caliber .30 projectiles out to 300 yards. It will shoot through a steel helmet or a flak jacket. There is reason to suspect it may inflict even more severe wounds, but this point has probably been overemphasized. Beyond 300 yards, however, the *M16* is not too effective.

The great advantage of the *M16* and its ammunition is lightness. The *M14* and 100 rounds in magazines weigh 16.5 pounds—the same as the *M16* and 250 rounds in magazines. Each combat soldier and Marine can carry at least twice as many rounds for the same weight.

The *M16* also has disadvantages, as do most weapons. The necessary cleaning procedures are time consuming. Burst-fire accuracy is not as good as it might have been if the rifle had been designed to fire more slowly and had a slightly different stock. Even with the new buffer installed, many specimens actually fire faster than 800 rounds per minute. But the *M16* is much better full automatic than the *M14* modified fired in the same manner.

The *M72*, 66-millimeter light antitank weapon (LAW)

Another inherent disadvantage of the *M16* is the tendency to waste ammunition. All burst-fire weapons do this to some extent, but the natural

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deduction made by young Americans, due to the publicity given to how many more rounds they can carry for the *M16* than for the *M14*, is that they have all the ammunition in the world. This is not true. Sometimes fantastic expenditures of cartridges inflict no casualties. Occasionally, units run out. The 30-round *M16* magazine has not been issued in Vietnam, perhaps, to limit ammunition waste.

Vietnamese soldier holding *M16* rifle

Another serious disadvantage of the *M16* is that presently there is no machinegun in Vietnam which fires the same cartridge. A single US Army platoon requires 5.56-millimeter ammunition for its rifles, 7.62 NATO ammunition for its machineguns, caliber .45 ammunition for its pistols, and special rounds for *M79* grenade launchers. At this level, the North Vietnamese Army needs only a single type of cartridge, the 7.62 intermediate.

On the other hand, the *M16* is lighter and at least as effective as the Communist *SKS* carbine and *AK* assault rifles. The *SKS* and 100 rounds weigh 12 pounds, 25 percent more than the *M16*. In addition, the *SKS* is not capable of burst fire. The *AK*, plus the same amount of ammunition, weighs 16.4 pounds which is 60 percent more than the *M16* with the same amount of ammunition. Our new rifle is deservedly popular with US forces, in part because of its light weight. The *M16* is even more desirable in the rifle units of our Oriental allies. Republic of Korea (ROK) troops, in spite of their great physical strength and stamina, often do not have the frame required to fit the *M1* and *M14* rifles. The Thais and the South Vietnamese have now, or soon will have, a rifle that fits them.

Heavy Weapons

The *M1*, or even the *M14*, is poor for arming men who, in many instances, do not weigh 100 pounds nor stand five feet tall. These two, full rifle power weapons weigh 10 pounds. The ARVN troops do not have, on the average, as much strength and stamina pound for pound as the ROK or American troops. Heavy rifles and ammunition curtail mobility. Furthermore, only a small fraction of these smaller men ever learn to shoot the *M1* accurately because the rifle kicks so badly when it is fired from a prone position. This is not true with the *M16*.

The *M14* is more powerful and more accurate at long range than the *M16*. There are places where it is superior. When ammunition weight is not important—for instance in one of the armored trucks that now form part of most large convoys—the *M14* rifle is ideal for fast, single shots. But it is not as good as the *M16* for bursts.

The *M14* appears to be destined to survive for a few more years as an outcast. It deserves a better fate.

Rifle units in the US Army and the Marine Corps were plentifully supplied in 1965 with arms designed primarily to defeat tanks. The 106-millimeter and 90-millimeter recoilless rifles and the 3.5-inch rocket launcher were all taken to Vietnam, although the enemy had no tanks at that time. These weapons could be used effectively against bunkers and even enemy personnel in the open. ARVN and ROK units had 106-millimeter recoilless rifles, 3.5-inch rocket launchers, as well as 57-millimeter and 75-millimeter recoilless rifles. But all of these weapons presently are used by Free World armies mainly to defend perimeters. A few jeep-mounted, 106-millimeter recoilless rifles are still being used. The ROK units have placed one 57-millimeter recoilless rifle on many of their *M113* armored personnel carriers (APC's).

Mobile Operations

For mobile operations, the armies of the Free World now rely almost entirely on the new US *M72* one-shot, 66-millimeter rocket launcher known as the light antitank weapon (LAW). This arm would not be as effective against a battle tank as a 106-millimeter recoilless rifle, but the enemy still does not have any tanks in most areas. The LAW is much lighter than any of the weapons it replaces; it weighs, complete, less than five pounds. It is said to be effective on bunkers, minor fortifications, and, to some extent, against jungle-covered snipers. However, its main advantage is weight.

Mortars are not as important in the Free World armies as they are for the enemy. They are not even as necessary as we thought in 1965. The 4.2-inch mortar is not really needed because it cannot be carried by units on foot. If truck or air transport is available, the 105-millimeter artillery piece can probably do the job better. The 105-millimeter howitzer is more accurate, more powerful, and longer ranged. The big mortar is still found in some base camps, but is useful mainly for firing illumination devices.

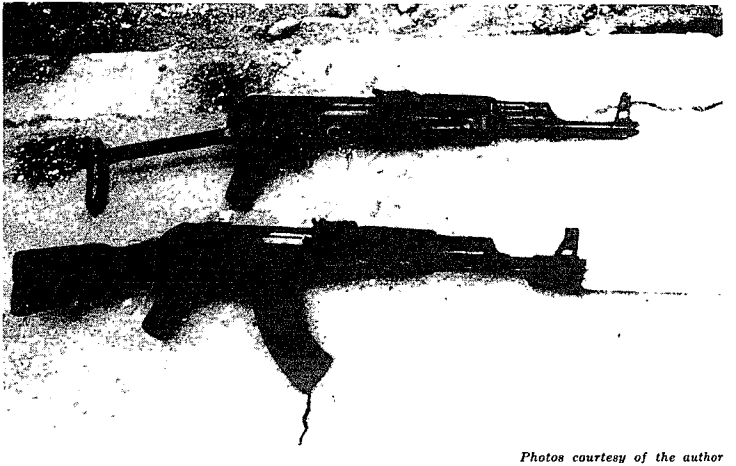
Emplaced 60-millimeter mortar and encased ammunition

The 81-millimeter mortar is still important and widely used. However, the weapon breaks down into only three loads which are heavy, even for Americans. Each round of ammunition in its protective container weighs 10 pounds. The US Army TOE calls for three 81-millimeter mortars in each rifle company, but these three weapons plus 40 rounds for each would be far too much to carry on foot in Vietnam. Three 81-millimeter mortars are

fine for semifixed defenses where ammunition can be stockpiled and resupplied by air or truck. For foot mobile company patrols, however, one is better than three. If extra carrying capacity is available, more ammunition is taken along.

Apparently, the procedure of employing an 81-millimeter mortar tube only without baseplate, bipod, and sighting equipment has been used in emergencies, but this device is not widespread nor efficient. No first-hand information was available in connection with it.

A better way of reducing weight without sacrificing accuracy is to substitute the 60-millimeter mortar for the 81-millimeter. There is a 60-percent weight saving immediately in the weapon itself. But the 60-millimeter mortar is, at present, a controversial piece. It is the oldest US weapon by year of design used extensively by the Free World in Vietnam, except for the US *Model 1911A1* caliber .45 pistol. But the Marines employ the 60-millimeter mortar extensively and effectively. They like it, especially for platoon-size patrols. Three mortars are officially organic in each US Marine Corps rifle company; one 60-millimeter mortar is normally assigned to each platoon. The 60-millimeter type is superior to the 81-millimeter because a unit can carry a greater number of rounds of ammunition for any given weight. Our Vietnamese allies share the opinion of the Marines.



Photos courtesy of the author

***AK* assault rifles made by Chinese Communists**

The US 7.62 NATO *M60* machinegun is virtually the only modern caliber .30 type in the armies of the Free World. This weapon is being used in helicopters, APC's and other vehicles, and in two roles in rifle battalions. Some ROK and ARVN units still have the *M1919* machinegun which fires the caliber .30 cartridge, but these are not

popular, mainly because the United States no longer uses them.

The *M60*, mounted on a tripod, is probably the finest weapon of its type for ground use. It fires reasonably slowly (about 600 rounds per minute) and from disintegrating clip belts. Barrels are easily changed. It can deliver a large volume of fire, if this is required, but it is accurate and does not waste ammunition by too high a cyclic rate.

For use at platoon and squad level where mobility is important, US units normally dispense with the tripod, although some of our allies do not. The *M60* is not perfect for use at this level because it does not use the same ammunition as the *M16* rifle, and its 23 pounds unloaded is a weight problem. To some extent, the extra power makes up for the weight of weapon and ammunition, but belt feed is not ideal for squad-level machineguns in the jungle. The old *Browning* automatic rifle could be converted to fire 7.62 NATO ammunition and reissued. However, young soldiers would resent being armed with a weapon that some of their grandfathers had used in World War I.

Cyclic Rate

At the other extreme, the *M60* is not good for use in aircraft and vehicles. The great disadvantage here is cyclic rate. For machineguns mounted solidly, high cyclic rate would not cause unacceptable loss of accuracy. Continuous fire is rarely necessary, but when a target does appear or is suspected, it is desirable to fire as many bullets as possible. The new 7.62 NATO *Minigun* with rates of fire up to 6,000 rounds per minute is replacing the *M60* aboard helicopter gunships, but this exchange is going slowly. To date, there are no *Miniguns* available for ground use. The new West German *MG42-59* weighs the same as the *M60* and fires the same ammunition, but can fire twice as fast.

The Free World also makes use of the US *M2* caliber .50 heavy machinegun which fires 710 grain bullets at above 3,000 feet per second. No one takes this heavy weapon out on patrols, but it can be valuable in static defenses and aboard armored vehicles for penetrating jungle and bunkers. The old "Quad Fifty"—four, caliber .50 heavy machineguns mounted together and firing at the same point—has been revived and is especially efficient from semiarmored trucks.

Communist Weapons

The Communists appear satisfied with their intermediate power small arms family—the *SKS* semiautomatic carbine, the *AK* assault rifle, and the *RPD* light machinegun. For use against US armor, their so-called "grenade launcher" with a 40-millimeter tube and an 82-millimeter warhead appears to be near ideal. This weapon is an inexpensive combination of tubing and welding; the projectile is simple and easy to produce. But in the hands of a dedicated soldier, it can be used to knock out a $500,000 tank. The enemy weapon is heavier than the US LAW, more powerful, and has more armored targets at which to shoot. I suspect that some of the popularity of the LAW with the forces of the Free World in Vietnam comes from its similarity to the *RP2*, although the principles of propulsion are different.

The Communists use both 60-millimeter and 81 and 82-millimeter mortars, but prefer the smaller size where mobility is important. They have a 120-millimeter type, but use it only

where foot transport is not necessary. So far, it has fired on Free World installations in the north only. The Communists have used more heavy materiel against us recently than ever before. Artillery of several sizes, especially 152-millimeter howitzers and 130-millimeter guns, fired on Khe Sanh. US helicopters were fired on in the A Shau Valley by real antiaircraft guns, not just 12.7-millimeter heavy machineguns similar to our caliber .50 gun. But all of this has occurred close to the demilitarized zone in the north or the Laotian border in the northeast.

North Vietnamese and Viet Cong units elsewhere use mortars and three types of rockets in lieu of artillery. These rockets consist of the new, light 107-millimeter, the long-ranged 122-millimeter, and the 140-millimeter which has the most power. The launchers for these rockets are all light, but the projectiles themselves are powerful. The 122-millimeter launcher weighs only 138 pounds and is easily disassembled. Each 122-millimeter rocket weighs 107 pounds, but can be carried in three pieces. Range is said to be about 12,000 yards, and the warhead is more powerful than a shell from a 105-millimeter howitzer.

The Communists have also introduced a "new" way of using an old arm—indirect fire from a 75-millimeter recoilless rifle. They put the sight from their 82-millimeter mortar on it and laboriously work out the exact range to a prime target. They fire rapidly five to seven rounds and then take off. This weapon is more accurate than a rocket and has greater penetration than a mortar.

The effectiveness of all weapons depends upon the men who use them and the tactics of their employment. Nothing is ever final, not even a temporarily perfect family of small arms. Terrain, strategy, tactics, and other elements will continue to cause changes. We now know what works and what does not work in the Vietnam War, but so does the enemy.

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